



New Mexico Tech Los Alamos National Laboratory

Joint Science & Technology

Memorandum of Understanding

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**New Mexico Institute of Mining and Technology
and Los Alamos National Laboratory
Memorandum of Understanding on Research and Education**

This Memorandum of Understanding (MOU) is entered into between the New Mexico Institute of Mining and Technology (NMT) and the Regents of the University of California (UC), operator of the Los Alamos National Laboratory (LANL or Laboratory) for the U.S. Department of Energy under Contract Number W-7405-ENG-36, both referred to below as Parties.

Whereas the Parties share the goals of strengthening their interactions by providing opportunities for research, education, recruiting, and retention, UC and NMT hereby enter into this MOU on Research and Education to accomplish this goal.

Program Goals and Benefits

NMT wishes to provide research opportunities for graduate and undergraduate students, postdoctoral researchers, and faculty to participate in new and innovative research in collaboration with the Laboratory. UC wishes to enhance its research collaborations with NMT in areas of strategic importance to the Laboratory and to provide a research environment that will encourage students to pursue various careers, possibly at the Laboratory. The present bilateral MOU is intended to allow both institutions to take full benefit of their overlapping and complementary strengths to build on present areas of excellence.

This MOU provides excellent opportunities for faculty and students at NMT and the Laboratory to develop formal collaborations in areas of mutually beneficial research and education. Academic interactions will help the Laboratory attract top-notch students and retain world-class scientists; that is, the program will provide an opportunity for students to understand and participate in the Laboratory's research programs. NMT will benefit through use of Laboratory facilities, resources, and intellectual capabilities. The Laboratory will benefit through the introductions of students and faculty from NMT to the varied programs at the Laboratory and from the opportunity to interest students in potential careers at the Laboratory. Further, Laboratory staff will have an opportunity to participate in NMT academic and research programs enriching their work within the Laboratory. A successful collaborative program will enhance synergy and cross-fertilization of ideas, provide solutions to scientific challenges, and develop new technologies and research areas.

A. Strategic Framework

Under this MOU, NMT and the Laboratory will establish the NMT/LANL Joint Science and Technology Laboratory, under which strategic partnerships will be established and directed. The following structure is established to develop and implement the NMT/LANL Joint Science and Technology Laboratory.

1. This MOU establishes an Executive Committee that will oversee the NMT/LANL Joint Science and Technology Laboratory and a Management Committee that administers the NMT/LANL Joint Science and Technology Laboratory.

2. This MOU with NMT includes NMT academic departments and its research organizations. The MOU establishes strategic research areas and recognizes a variety of possible collaborative models that the Executive Committee may develop. These collaborative programs should include staff-faculty joint research or exchanges, undergraduate and graduate programs, postdoctoral programs, and other mechanisms that would encourage staff-faculty-student interactions, e.g., workshops and seminars.

B. Program Components

The parties anticipate that three kinds of programs will be initially supported through this MOU, as implemented by specific approved proposals: (1) student and postdoctoral scholar programs; (2) university faculty and laboratory staff programs; and (3) collaborative research programs. This MOU defines the scope and responsibilities for the successful implementation of these cooperative programs. It is expected that these programs will be implemented when appropriate, either under existing Laboratory programs for these activities, or via the development of new programs agreed to by the parties, and approved by the U.S. Department of Energy as appropriate. The Management Committee will be responsible for developing and implementing the processes and procedures for these programs with approval and oversight by the Executive Committee.

(1) Student and Postdoctoral Scholar Programs

Emphasis in these programs is on ensuring that students are placed in rewarding education and research assignments that complement both the NMT program and Laboratory needs. In general, students are expected to complete their course work at NMT and perform research at the Laboratory at an appropriate time to be determined by the student's NMT faculty advisor in concert with the Laboratory mentor. Subject to availability of funds and approval by the Management Committee, funding opportunities may be provided for undergraduate and graduate students, and postdoctoral researchers. Faculty participation and advising is expected for both the on-campus and off-campus components of the program. The selection of student participants, mentors, and research projects under this MOU will be made through a process developed by the Management Committee.

A faculty advisor will be assigned to each student. The advisor, in concert with the Laboratory mentor, will be responsible for guiding the student's research. Faculty advisors and Laboratory mentors will monitor progress to assure that the students have a positive experience in this program. For research expected to result in academic credit, final credit decisions and academic evaluations will be made by NMT, with appropriate input from Laboratory personnel. NMT will have full access, subject to the Laboratory's policies and regulations, to all of the students' work for review and evaluation and pedagogical purposes, except as specifically provided to the contrary in any implementing agreement executed by the parties.

Students' intellectual property rights are governed by NMT's Intellectual Property Policy, subject to any terms and conditions as set forth in any specific implementing agreement between NMT and UC.

Undergraduate Programs. The cooperative program is expected to offer several opportunities for undergraduate students to participate. Although the research and continuing education at the Laboratory will normally occur during the NMT summer session, it is possible that applicants with the advice and consent of their faculty and Laboratory mentors might participate at other appropriate times.

The Undergraduate Student Program. The goal is to combine on-campus academic programs with work experiences in technical divisions at the Laboratory. Specific job descriptions, qualifications, and selection criteria and appropriate funding arrangements will be developed by the Management Committee. In general, sophomores and juniors in good academic standing in their majors who have research interests compatible with those of the Laboratory staff will be eligible to apply for the program.

Graduate Programs. It is anticipated that graduate students will be offered several opportunities for participation. Subject to NMT policies, practices, and procedures, thesis work will be supervised by the graduate advisory committee of the student and performed both at the Laboratory and at NMT. Work performed at the Laboratory is subject to Laboratory policies and procedures for graduate students and thesis activities. Subject to availability of funds, full fellowships for doctoral dissertations may also be supported. The parties anticipate that funding support will typically include some combination of fellowship, graduate student research grant, and tuition and fee compensation. Selection of graduate students and funding support will be determined through a process developed by the Management Committee.

Graduate Research Program. The program may have multiple tiers to match the student education cycle. For beginning graduate students, summer learning and research opportunities at the Laboratory may be appropriate. As students progress in their education and define their research fields and interests, the Laboratory, subject to availability of funds, may move toward multiple-year funding commitments, for a period of one to four years. For long-term funding commitments, students may spend substantial fractions of their time at the Laboratory.

Graduate Scholarship Program. Subject to availability of funds, an annual graduate scholarship program will support PhD candidates in one of the collaborative research areas defined by this MOU.

Postdoctoral Programs. Based on the availability of funding, opportunities for postdoctoral researchers to participate through this MOU may include (1) short-term visits to the Laboratory to learn valuable skills and to conduct research or (2) extended stays to participate in collaborative research projects jointly supervised by NMT and the Laboratory.

(2) University Faculty and Laboratory Staff Programs

These programs are expected to enhance interactions between NMT faculty and the Laboratory staff, to increase the participation in seminars sponsored by the two organizations, and to

increase their opportunities for collaborative research projects. Short-term exchanges of faculty and staff that will include seminar presentations and provide opportunities for interactions among faculty, staff, and students to discuss research projects will be encouraged and supported, when possible. It is not contemplated that the exchanges will result in co-employment of the same individual by both parties. The exchanges will also provide opportunities for faculty and students to discuss possible collaborative research projects.

The mentors and faculty advisors for students who participate in the graduate programs described above will be expected to participate in the collaborative programs. The faculty will be expected to have frequent and extended presence at the Laboratory in appropriate office space, subject to Laboratory safety and security policies and regulations. This is essential for the communication between the two institutions and for the educational benefits of the students. Likewise, Laboratory scientists will have frequent and extended presence on the NMT campus, be subject to NMT's safety and security policies and regulations, as an essential part of fostering scientific collaborations and attracting students to the Laboratory.

Subject to the availability of funds, support will be provided to faculty or staff for "sabbatical" exchanges and to visiting researchers for one or more academic semesters. A visiting scholar's program is expected to incorporate two-way exchanges, funding NMT faculty to do research at the Laboratory and Laboratory staff to teach and conduct research at NMT, subject to the employment obligation of Laboratory Staff at the Laboratory. An important component is adjunct professorships, subject to the same requirements and standards as those for NMT faculty appointments and other applicable NMT policies, practices, and procedures, but subject to UC's obligations under its prime contract with the Department of Energy. The institutions will nominate their respective faculty or staff through a process developed by the Management Committee for consideration for these opportunities. Adjunct professorships will be appointed, as usual, by academic departments at NMT.

Courses, Seminars, Workshops, and Colloquia. Subject to the availability of funding, special-topic courses, workshops, and targeted seminar series may be established. These faculty and staff exchange programs will enhance interactions between the NMT faculty and the Laboratory staff, increase the participation of each in the other's seminars, develop a better understanding of issues relevant to both institutions, and increase opportunities for collaborative research projects.

(3) Collaborative Research Programs

Subject to the availability of funds, the Executive Committee, through this MOU, will establish funds to support collaborative research projects designed to attract large extramural research grants. This program is expected to provide seed funding for projects that clearly merge and expand research between the two institutions and that are related to topics of mutual interest. The projects will be awarded to scientists at the Laboratory and NMT through a selection process established by the Management Committee.

Research Areas

LANL and NMT have initially identified five research areas of strategic importance to both institutions that will be supported under this MOU as available funds permit: the Magdalena Ridge Observatory, astronomy/astrophysics, earth sciences (including geophysics, hydrology and atmospheric physics), materials, and energetic materials. NMT academic departments and research divisions will play significant roles in developing interdisciplinary research endeavors with the Laboratory.

C. Governance

Program Administration

An Executive Committee for the NMT/LANL Joint Science and Technology Laboratory is established under this MOU. The members of the Executive Committee will be the Deputy Director for Science and Technology (DDST) for LANL, the Vice President for Research (VPR) at NMT, and one alternate from each institution who will attend meetings but not vote unless the corresponding principal is absent. The Executive Committee's responsibilities will include budget authority for their respective institutions, and adherence to Laboratory, NMT, and government policies, rules, and regulations. For example, the institutions will follow the appropriate policies to protect intellectual, scientific, or academic freedom. The Executive Committee will report annually to the NMT President and to the Laboratory Director on the progress of the cooperative programs. In addition, the Executive Committee will propose changes to this MOU including research areas and student, faculty/staff, and research programs.

The Executive Committee will charter and establish the Management Committee for the NMT/LANL Joint Science and Technology Laboratory. The Management Committee will be composed of equal voting membership from NMT and LANL and to be named by the parties' respective Executive Committee members. Management Committee membership will be drawn from the Division Leader level for LANL and the Department chair and Director level for NMT. The Executive Committee will serve as *ex officio* members of the Management Committee and oversee the activities of the Management Committee. The Chair of the Management Committee will alternate annually between NMT and LANL and will be chosen by the Committee members from among their voting members. The Vice Chair will be chosen similarly, will also alternate annually between LANL and NMT and normally will become the Chair the following year. Either party may change its representatives to the Management Committee at any time upon notice to the other party. The Management Committee will be responsible for developing and implementing the processes and procedures for programs within the terms of this MOU, and decisions shall be made by a majority of those members voting. The Management Committee will perform periodic program reviews to evaluate the projects, suggest new strategic areas for research, and resolve issues.

Los Alamos National Laboratory. The Laboratory DDST will oversee and coordinate implementation of this MOU on behalf of the Laboratory Director. Laboratory divisions or staff will be involved with the implementation of the MOU. Technical divisions will be responsible for research assignments, training, and the supervision of the students. Each student will be

assigned a Laboratory mentor, who will work cooperatively with the NMT faculty advisor, and who will be responsible for the content and review of the student's work at the Laboratory. The Laboratory mentor will communicate regularly with the faculty advisor about the student's progress and experience and will host the student's faculty advisor during Laboratory visits.

New Mexico Institute of Mining and Technology. The Vice President (VPR) for Research will oversee and coordinate the implementation of this Agreement on behalf of NMT. The NMT VPR will administer the University activities necessary to support the policy, recruiting, and financial issues related to the Agreement's operation at NMT. The NMT department chairs, faculty and research staff will be involved with the implementation of the Agreement. The NMT departments and faculty will be responsible for research assignments, training, academic evaluation, awarding of academic credit, and the supervision of the students. Each student will be assigned a NMT mentor, who will work cooperatively with the Laboratory mentor and who will be responsible for the content and review of the student's work at NMT. The NMT mentor will communicate regularly with the Laboratory mentor about the student's progress and experience and will host the Laboratory mentor during NMT visits.

Los Alamos/NMT Program Support. The Laboratory and NMT are expected to provide program support to recruit, matriculate, and help maintain a viable cooperative program between the two institutions. This will be done cooperatively and complementarily at both institutions through publicity and advertisement.

Program Initiation. This MOU is effective on the date on which duly authorized representatives of UC and NMT sign it. The Executive Committee will develop a mutually agreed-upon process for the startup and administration of this MOU.

Program Evaluation. The Management Committee will evaluate the cooperative program on an annual basis using information such as the following:

- Reports and evaluations by students and others on research projects,
- Theses and dissertations supported by this MOU,
- Reports from NMT faculty and staff and Laboratory staff involved in exchanges, visits, and sabbaticals,
- Hires of students participating in the programs,
- Reviews of the research as required by the Laboratory or NMT, and/or
- Proposals and applications for research grants.

Funding. The program established through this MOU will be funded with UCDRD (UC Directed Research and Development) funds or other funding sources yet to be identified. Contingent upon the availability of funds and subject to approval by the respective institutions, LANL will initially provide \$500,000 for the first year to support the programs in this MOU, and NMT will contribute research and office space at NMT in support of this MOU. Renewal of this MOU will depend in part on each party's ability to continue its funding. Expected dollar amounts to be contributed by LANL may be revised from time to time subject to discussion between NMT and LANL, the availability of funds, and institutional approval.

Funds will be expended only for allowable costs in accordance with Laboratory, NMT, and government policies, rules, and regulations.

Publication. NMT will have the right, at its discretion and consistent with its tenet of academic freedom, to release information or to publish any material resulting from its performance hereunder subject to applicable laws and New Mexico Institute of Mining and Technology policies, procedures, and practices. Both parties subscribe to open publication of results derived from exchanges and research performed under this MOU.

Intellectual Property. Ownership of any intellectual property created in the performance of work managed under the framework established by this MOU will be determined in accordance with applicable intellectual property law and regulations and New Mexico Institute of Mining and Technology, University of California, and Laboratory procedures and practices consistent with the contract between the University of California and the Department of Energy for managing and operating the Laboratory. Individuals participating in research under this MOU will submit any invention disclosures simultaneously to both institutions. The UC-NMT Memorandum of Understanding on Intellectual Property will provide process and procedures to guide intellectual property issues.

Nothing in this MOU shall be construed as a license or assignment of any rights in any intellectual property from either Party to the other Party or to the U.S. Government.

Liability. The Laboratory shall be responsible for all liability, loss, expense (including reasonable attorney's fees), or claims for injury or damages arising out of the performance of this MOU only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of the Laboratory, its officers, agents, or employees.

NMT shall be responsible for all liability, loss, expense (including reasonable attorney's fees), or claims for injury or damages arising out of the performance of this MOU only in proportion to and to the extent such liability, loss, expense, attorney's fees, or claims for injury or damages are caused by or result from the negligent or intentional acts or omissions of NMT, its officers, agents, or employees.

Nothing in this section is intended to create liability or contractual obligations on behalf of either party. Instead, this section merely describes the parties' acknowledgments of their existing responsibility for liability under certain circumstances.

Changes to the MOU. This MOU between UC and NMT is intended to enhance scientific and educational programs of mutual interest to the two institutions. The MOU is initiated as a cooperative partnership between NMT and UC but may be modified by them to change the programs or research areas. The MOU may be adjusted in order to accommodate a changing environment, new guidance from NMT or UC, or insight gained from the ongoing interaction. The modification of any terms of this MOU shall be made through a written amendment signed by the authorized representative of each party.

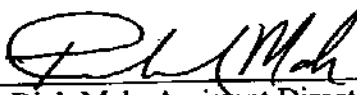
Neither Party shall be, nor hold itself out as, a subcontractor, partner, or agent of the other Party. The Parties agree that this MOU does not constitute a joint venture, affiliation agreement or other similar arrangement.

notice to the other party. In the event that funding for the program is not available or that, for whatever reason the MOU is terminated, UC and NMT are expected to use their best efforts to help students and postdoctoral scientists participating in the program to secure funding so that their education and research will not be interrupted; however, neither NMT nor UC is responsible for securing such funding or liable if that funding is not secured. If the MOU is terminated, NMT and UC will meet in good faith to agree upon a reasonable closeout plan for funded activities that is equitable to both parties and within the spirit of this MOU.

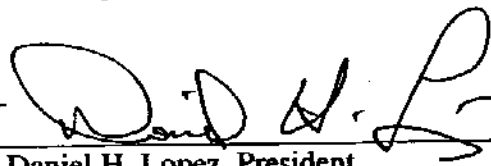
Dispute Resolution. Any disputes between the parties arising out of this MOU or out of any implementing agreement shall, except to the extent provided to the contrary in any such implementing agreement, be resolved by the Executive Committee. To the extent the Executive Committee is unable to resolve the dispute, it shall be referred to a decision-making panel consisting of three individuals not then employed by either UC, the Laboratory, or NMT, as follows. One person shall be chosen by the Director of the Laboratory from a list of three names provided by the President of NMT, one person shall be chosen by the President of NMT from a list of three names provided by the Director of the Laboratory, and the third person shall be chosen by those two persons.

This MOU may be signed in one or more counterparts (including faxed copies), each of which shall be deemed one and the same original.

The parties have caused this MOU to be executed in duplicate originals by their duly authorized representatives.


Rich Mah, Assistant Director
Los Alamos National Laboratory
signing for
George Pete Nanos, Director
Los Alamos National Laboratory

6/28/04
(Date)


Daniel H. Lopez, President
New Mexico Institute
of Mining and Technology

(Date)

Nature of this MOU. This MOU describes a mechanism for coordinating activities and is not intended to create any relationship between the parties other than that of independent entities cooperating to effect the purposes of the MOU. No provision of this MOU is intended to conflict with any law, policy of either party, or provision of the prime contract between the Department of Energy and UC, and the provisions should be construed in a manner that will uphold their validity. While this MOU sets a framework for the Parties to implement projects, the actual performance of projects will occur under mechanisms to be developed by the Management Committee.

Costs. With the exception of funding or other considerations allocated to specific technical projects by the Management and/or Executive Committee(s), each party shall bear its own expenses in connection with the activities conducted under this MOU.

Export Control. The Parties understand that information resulting from or exchanged during the course of this MOU may be subject to export control laws and that each Party is responsible for its own compliance with such laws. NMT represents and LANL acknowledges that NMT's faculty, staff, and student body include persons from foreign nations, and that the provision of export controlled information to NMT without prior arrangement may result in the violation of export control laws.

Disclaimer of Warranties. Neither Party makes any warranty, express or implied, as to the accuracy or usefulness of any information disclosed to the other Party under this MOU, or that the use of any such information would not infringe intellectual property rights owned by third parties.

Proprietary or Privileged Information. If it becomes necessary for either Party to disclose proprietary or other privileged information to the other Party to effectuate the purposes of this MOU, a separate Non Disclosure Agreement (NDA) applicable to such information shall be executed by the Parties.

Notices. Communications regarding this MOU shall be addressed as follows:

University of California
Los Alamos National Laboratory
P. O. Box 1663, MS A121
Los Alamos, NM 87545
Attn: DDST
Telephone: (505) 665-4225
Fax: (505) 667-7034

New Mexico Tech
801 Leroy Pl
Socorro, NM 87801
Attn: Vice President for Research
Telephone: (505)-835-5646
Fax: (505) 835-5649

Miscellaneous. Activities undertaken by UC under this MOU shall be conducted only on a noninterference basis with respect to U.S. Department of Energy programs at the Los Alamos National Laboratory and shall be within the general scope of work and in accordance with the terms of the contract with U.S. Department of Energy.